QA/QC Manual
Beneficial Use Reconnaissance Project
Wadable Streams
1998

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BURP Technical Advisory Committee

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Auditing Field Forms

The objective when auditing field forms is to make sure that all forms are consistent in the way which they were filled out and to ensure the field forms are filled out precisely in order to facilitate correct and efficient data entry. The information must fit a "mold", if you will. The following outlines what information is required on the field forms and how it should be entered onto the field form.

Field Form Page 1:

Stream Name:

- ☐ Required
- ☐ Spelling must be EXACTLY consistent with the GNIS (Geographic Names Index System). No Abbreviations are allowed. Be aware of similar spellings such as "Tenmile Creek" and "Ten Mile Creek" which are both different and shouldn't be written as "10 mile Creek." Also note how a stream name is organized. " Middle Fork Boise River" is not the same as "Boise River, Middle Fork."
- ☐ If a site is described as an "upper" or "lower" site on a stream, the words "upper" or "lower" should be in parentheses after the stream name. For example: Middle Fork Boise River (upper)

Site ID:

- ☐ Required
- ☐ Must be 12 digits with the following structure:

Present year	(4 digits)	1998
Waterbody type	(1 digit)	S (for "stream")
Regional Office Abbreviation	(3 digits)	
		(CDA - Coeur d'Alene)
		(LEW - Lewiston)
		(BOI - Boise)
		(TWF - Twin Falls)
		(POC - Pocatello)
		(IDF - Idaho Falls)
Crew	(1 digit)	A, B, C, or D
Site Number	(3 digits)	example: 001, 045, 165

- ☐ Example of Site ID for Boise "A" crew, site 34: 1998SBOIA034

- ☐ A site ID is unique to that site. If a stream is BURP'd twice both sites should have different site ID's and the stream name on the forms should have an "(upper)" and "(lower)" labelling.

Date:

- ☐ Required
- ☐ The form used is: Year/Month/Day (YY/MM/DD)
- ☐ The date should be six digits long. "98/6/3" is not correct. In cases such as these, add the zeros to make it "98/06/03"

Hydrologic Unit Code (HUC):

- ☐ Required
- ☐ Must be eight digits. For example: 17050123
- ☐ Also called "fouth field watershed" or "cataloging unit"

PNRS:

- ☐ Optional
- ☐ Acronym for Pacific Northwest River Study. A study that described segments of streams and rivers to give them specific numbers.
- ☐ PNRS has the form: NNNN.NN. For example: 0152.65

WB ID No.:

- ☐ Optional
- ☐ A number assigned by DEQ to a segment of a waterbody within a HUC which has deemed to have the same beneficial uses. The number is numerical identification to be used in the standards
- ☐ The numbers range from one to three digits, no decimals.

Public Land Survey:

- ☐ Required
- ☐ To describe a 1/64th of a section, the correct method is:
  Township, Range, Section, 1/64th section, 1/16th section, 1/4 section
  For example:
  T04N, R03E, Sec. 23, SW1/4, SE1/4, NE1/4
- ☐ To describe a location in a section, use the "Official DEQ PLSS Locator Template"

For section:	Use template called:
1 - 5	"A Tall Section"
7, 18, 19, 30, 31	"A Wide Section
6	"A Tall and Wide Section"
All other sections	"A Normal Section"

- ☐ See Appendix A

Longitude/Latitude, Datum, and Lat/Long Confidence:

- ☐ Required
- ☐ If uncorrected GPS data was used, decimal seconds to the hundredths should be reported. Datum should be NAD83, and Confidence should be 100m. If corrected GPS data was used, Datum should be NAD83, and Confidence should be <5m
- ☐ If Lat/Long taken from a map, the degree of precision should be to whole seconds (not decimal seconds), Datum should be NAD27, and Confidence should be 500m
- ☐ Doublecheck the crew's work at all times. Many errors occur in this information. Transcription errors are common.

County:

- ☐ Required

Ecoregion:

- ☐ Required
- ☐ Usually the crews are right, but if something looks weird, such as a the Northern Rockies Ecoregion at a site in the Owyhee Mountains, double check it. The crews are told to determine the ecoregion by what they see at a site, not necessarily what the map might indicate for a particular location. Especially at ecotones, boundaries of ecoregions, an overlapping effect can occur or "fingers" of one ecoregion can protrude into adjacent ecoregions.
- ☐ Shortcuts are not allowed. For example "Snake River" must be "Snake River/High Desert"

Map Elevation:

- ☐ Required
- ☐ Make sure units match measurement. 400 feet elevation and 4500 meters are probably both wrong

Location Relative to Landmark:

- ☐ Required
- ☐ Ask yourself: "Could a person new to the area find this site without any trouble?"
- ☐ Description must be relative to a permanent structure or point on the ground.
- ☐ Do not use information that is only found on a map such as section lines, countour lines, or county lines. Do not use vague information like "bend in road".
- ☐ Good locations are mountain peaks with names, road intersections, road mile markers, stream confluences, powerlines, small towns, waterfalls, islands, campgrounds, etc.

Weather Conditions:

- ☐ Required

- Three categories of weather are to be considered; cloud cover, intensity of rain, and amount of wind.
- The weather is to be described with the following words:

Cloud Cover	Intensity of Rain	Amount of Wind
Foggy	Misty	Thunderstorms
Partly cloudy	Light Rain	Breezy
Mostly cloudy	Raining	Light wind
Cloudy	Hard Rain/Downpour	Windy
		Very Windy

Crew Members:

- Required
- Format to be used is "First Initial, Last Name". For example: J. Smith
- Nicknames aren't to be used.

General Wetted Width (M):

- Required
- This is an estimate to help the crews establish a reach length.
- If width is less than or equal to 5 meters, reach length must be 100m minimum
- If width is > 5 meters, reach length should be at least 20 times the width

Total Reach Length (M):

- Required
- Must be at least 100m if stream is less than or equal to meters wide
- Must be 20 times the width is stream is more than 5 meters wide
- Should be close to the Longitudinal Habitat Distribution which is on page 6.

Stream Order:

- Required
- See Appendix B, "Guide to Stream Order Classification"
- One of the numbers should be circled, and QA personell should double checked it
- Stream order is a way of describing the size of a stream. The actual number is derived by adding forks of streams in this manner: Starting at the headwaters of a drainage, a stream is an ephemeral stream. When on the map a stream is shown as a perennial waterbody it is considered a first order stream. When that first order stream joins with another first order stream it becomes a second order stream. If a second order stream joins with another first order stream, it is still a second order stream. However, if a second order stream joins with another second order stream, it becomes a third order stream. If that original second order stream conlfluences with a stream of a higher stream order, it gains that higher number. Likewise, if a stream joins with a stream of a smaller stream order, it maintains its original stream order. This process is continued all the way downstream to the BURP site.

- ☐ A 1:100K scale map is to be used.

Stream Gradient:

- ☐ Required
- ☐ Determined in the field with the aid of a inclinometer, but can also be derived/doublechecked in the office by dividing the known elevation change between two points on a stream by the distance between those two points
- ☐ Number is usually small, less than two or three. If it is large, like four to ten, doublecheck the topographic map to see if reach occurs in an area of high relief.

Rosgen Stream Type:

- ☐ Required
- ☐ Classify to Level 1 only.

Water Temperature:

- ☐ Required
- ☐ Units are necessary. Temperature must be in degrees Celcius.

Time:

- ☐ Required
- ☐ 24 hour time should be used. For example 3:30pm would be 15:30.

Amphibians and Fish Observed:

- ☐ Optional
- ☐ Spelling must be checked

Valley Type:

- ☐ Required
- ☐ Only one should be circled

Sinuosity:

- ☐ Required
- ☐ Only one should be circled

Activities Affecting Reach:

- ☐ Required
- ☐ Circle all that apply
- ☐ Briefly scan Additional Comments to see if there's mention of more activities that weren't marked

Additional Information:

- ☐ Optional
- ☐ Check for spelling and legibility.

Field Form Page 2

- ☐ Optional
- ☐ More "Additional Information" if needed
- ☐ Check for spelling and legibility

Field Form Page 3

Discharge Measurement:

- ☐ Required
- ☐ Enter the raw data from the table into the Lotus program "Flowcalc6". The answer on the end should be entered onto the form and rounded to the nearest tenth of a decimal
- ☐ Due to computer rounding and a slightly different program than the Regional Offices might have, minute changes to CFS measurements are not significant
- ☐ When to tell Regional Offices about Discharge Measurement changes:
  - -If Central Office total is significantly different (1 - 2 CFS) than their total.
  - -If Central Office total is <5 and their total is >5, or vice versa

Macroinvertebrate Samples:

- ☐ Required
- ☐ Were samples taken during low/stable flow? "Yes" or "No" must be circled.
- ☐ Sample Number:

  Each of the following are required for all three transects

  Label:

  Transect one usually has "T-1" somewhere in the title. The same applies for transect two and three.

  Sampler Used:

  One of the collection methods should be circled

  Habitat Sampled:

  One of the stream habitat types should be circled

  Time:

  Military time should be used

  By:

  The name of the person collecting the bug sample should have their name noted here; first initial, last name
- ☐ Three transects are required. If less than three transects are present, there must be a note explaining why in the notes section.

Field Form Page 4:

Wolman Pebble Count:

- ☐ Required
- ☐ A minimum of fifty counts should have been taken at each trasect.
- ☐ Each box should have a LEGIBLE total. It is necessary to enter zeros for all the boxes for which there were not tallies.
- ☐ Doublecheck the tallies for each box.
- ☐ The lines labeled "subtotal" and "total" should be blacked out with a marker. These totals are used solely for the field crew as a guide to help them get a tally of at least fifty for each transect. The BURP application used for this information only uses the raw data from this page.
- ☐ Comments such as "all silt" and "all sand" are UNNACCEPTABLE, as are just writing "50" in one of the boxes. Mike Edmondson should be immediately informed if one of these situations arise.

Large Woody Debris:

- ☐ Required if stream contains LWD.
- ☐ If a number is entered, it needs to be legible.
- ☐ A zero should be entered if no LWD present in stream.

Canopy Closure:

- ☐ Required
- ☐ All boxes must have a number entered.
- ☐ No number should be larger than 17.

Field Form Page 5:

Width/Depth Ratio:

- ☐ Required
- ☐ All boxes should have numbers entered in them
- ☐ Bankfull Width must be larger than Wetted Width
- ☐ Based on what the Wetted Width is, there should be 3, 5, or 7 Wetted Depth measurements (see the small box at right of page)
- ☐ Average Wetted Depth is an average of the Wetted Depth Measurements. Doublecheck with a calculator

Photo Information:

- ☐ Required
- ☐ Roll name can be anything, but must be something
- ☐ Photo number and Directional information must be present for all photos taken.

- ☐ Photo number and Directional information must be present for all photos taken.
- ☐ Azimuth is optional

Field Form Page 6:

Longitudinal Habitat Distribution:

- ☐ Required
- ☐ All stream habitat types must have a total in the "total" space provided. If one or more of the habitats didn't exist within the reach, a "0" should be in the "total" space
- ☐ The total of all habitat types should be at least 100m or should be at least 20 times the Wetted Width of the stream from page 5
- ☐ The total must be within a couple meters of the "Total Reach Length" from page one

Streambank Condition:

- ☐ Required
- ☐ The left bank and right bank should both equal 100% independently

Habitat Assessment Summary Sheet:

- ☐ Required
- ☐ One of the prevalences, riffle/run or glide/pool, must be circled
- ☐ The prevalence should conform to the dominant habitat type from the "Longitudinal Habitat Distribution" secion. If it doesn't, the Regional office should be contacted to see if an error was made
- ☐ The shaded rows in the table should have numbers entered
- ☐ The unshaded rows have numbers which the BURP application calculates from other data on the form
- ☐ It is not necessary to total the scores at the bottom of the table

Pool Quality Index:

- ☐ Required
- ☐ "Max Pool Depth" must be greater than "Tailout Depth"
- ☐ All measurements entered into the table must be actual numbers. Words such as "silt", "boulder", "all sand" are not acceptable. It is also unnacceptable to enter ranges such as "<1mm" or ">254mm"
- ☐ Doublecheck to see that the proper code was assigned. Data entry only inputs the raw data, however if the code the crew wrote doesn't match the raw data, it must be corrected.
- ☐ All numbers must be legible. Some of the boxes are fairly small so check carefully as legibility might be difficult.

Map Page:

- ☐ Required
- ☐ Map requires four pieces of information:

  Stream Name
  Site ID
  Map Name
  Scale

- ☐ Site must be obviously labeled on the map with an arrow or an X or something else easily visible

2

DEBATCHING CRITERIA

Field Forms cannot be entered into the database if any of the REQUIRED information is missing. Central Office personell are very limited in the assumptions they can make regarding missing information. Usually the Regional Office must be contacted or the forms must be sent back so that errors can be corrected.

The following is a list of changes the Central Office Personell can make:

- ☐ Some stream name problems, especially ones corrected using the GNIS
- ☐ County (according to lat/long and map)
- ☐ Datum and Confidence
- ☐ Public Land Survey
- ☐ Elevation
- ☐ Discharge, if changes are minimal and do not change about the 5 cfs threshhold
- ☐ Math errors
- ☐ Map name and scale
- ☐ Spelling errors in comments
- ☐ other obvious typo errors

The following is a partial list of errors for which the Central Office crew cannot fix and must send the field forms back to the regional offices for corrections to be made:

- ☐ Information cut off in copying, or copies illegible
- ☐ Unreadable or confusing entries
- ☐ Unsolvable problems with map information and stream names
- ☐ Location descriptions that are too vague or missing altogether
- ☐ No date
- ☐ Missing crew members' names on front page or macroinvertebrate samples
- ☐ Macroinvertebrate habitat and/or sampler type missing
- ☐ Pool quality Index entries which aren't numbers
- ☐ Streambank conditions which don't total to exactly 100% for each bank
- ☐ Longitudinal Habitat Distribution isn't within ½ meter of the Reach Length on page one, or the total is less than 100m
- ☐ Any other problem which needs field crew input to be solved

3

Procedures for Debatching and Rebatching Field Forms

See "Field Form Auditing Flow Chart", page 13.

Originals and Examples of each form mentioned below can be found in Chapter 4.

Debatching

If an error on a form by a field crew cannot be fixed by the QA/QC staff in the central office, the form must be sent back to the region so the error can be fixed. The following is the process to be used when a form is debtatched and sent back to the region for correction.

1. First, stamp the form to be debatched in the bottom right-hand corner of every page with the yellow D-stamp. The accompanying error sheet (used in the QA/QC process to list errors found on each form) should be stamped in the upper left-hand corner.

2. Fill out a white/yellow Debatch slip with the appropriate information. In the "Comments:" section, instructions need to be provided on how to fix the error(s). These should be written as if writing directly to a crew member.

3. Attach the white half of the Debatch slip to the error sheet and file in the Debatch file under the appropriate date. Attach the yellow half of the Debatch slip to the entire form and send it to the region.

4. On the field form tracking sheet and batch tracking sheet, enter the date the form was debatched and the date it was sent to the region in the appropriate columns.

5. File the error form with its attached white Debatch slip in the appropriate region's file folder in the "Debatch" hanging file.

Rebatching

The following is the process used when a debatched form is corrected and is resubmitted by the region:

1. When the form returns from the region, it should still have the yellow slip attached to the D-stamped copies. On the field form tracking sheet and batch tracking sheet, note the date that the form was returned.

2. Find the corresponding white slip/error sheet which has been filed under the appropriate region in the "Debatch hanging file.

3. Detach the D-slips and throw away the yellow copy. Stamp the white copy with a DEQ "Received" stamp.

4. The form is ready to rebatch. Compile a batch-sized number of returned forms and log them into the log book as if they were a new batch (make a note on the batch tracking sheet that this batch contains rebatched forms).

5. Circle the stamped "D"'s (on the error sheet and forms) to signify that they have been rebatched.

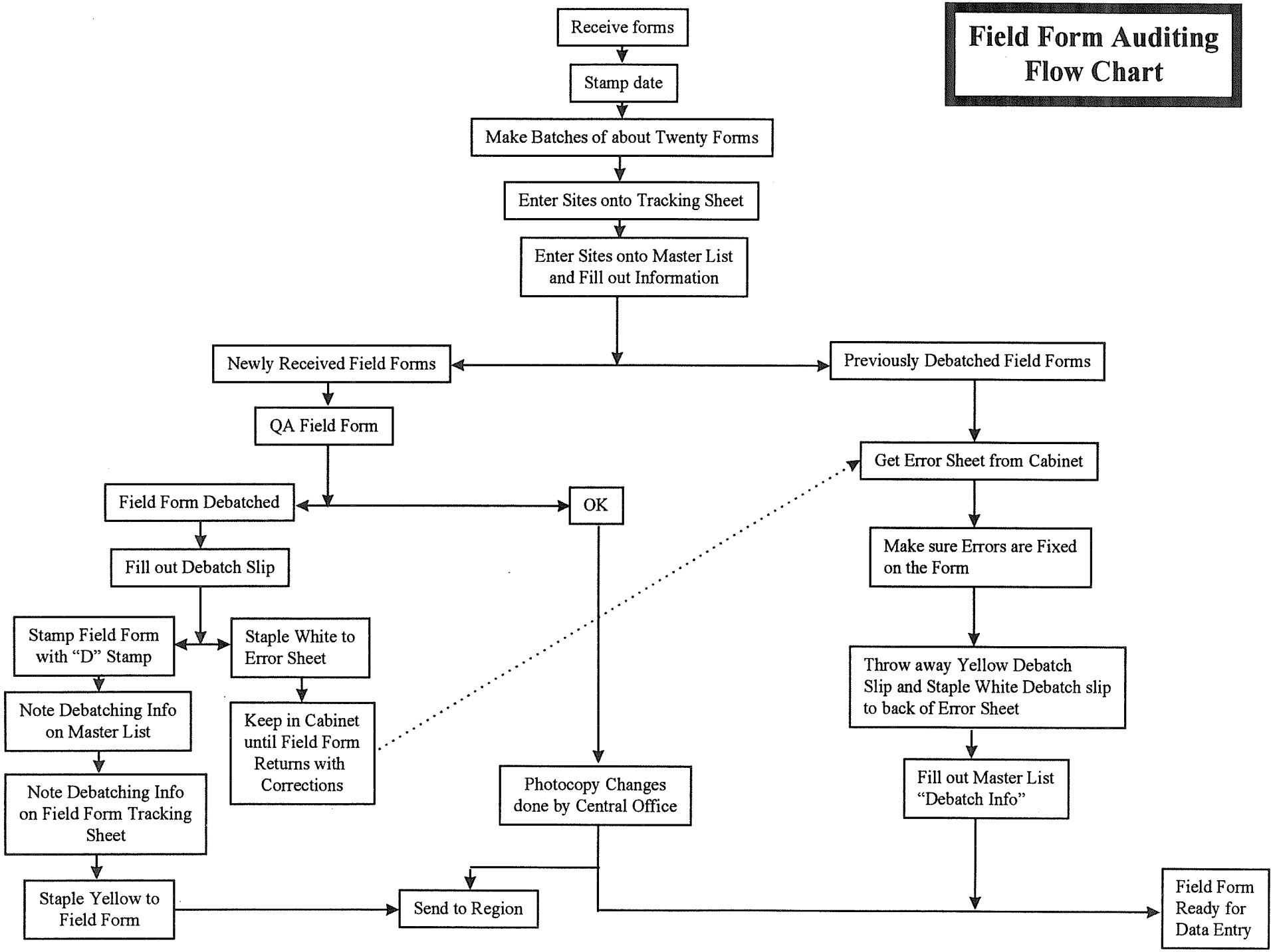
6. Audit the forms as any other forms would be audited. If any form contains further errors that cannot be handled by the central office, it may be debatched again, following the same procedure as above. If the form contains no errors, it may be sent to Data Processing with the batch.

7. File the error sheets and the white Debatch slips for the new batch in the regular error sheet folder for the appropriate region.

Note:

If changes are made to any form by the Central Office, either before or after the form was sent back to the region, they must be photocopied, highlighted, and sent to the regions as they would be for any other form. Although the crew might have noted changes on the form when it was sent back to them, they may have only noticed the error mentioned on the debatch form and may be unaware of any other changes the Central Office might have made.

Field Form Auditing Flow Chart



4

Tracking Forms

This section contains examples of the forms generated for tracking the data for 1998. The titles and purposes of the forms are listed below, and the actual forms can be found on the following pages.

BURP Field Batch Tracking Sheet:	Tracks the field forms by batch number; also includes debatch information.
BURP Field Form Tracking Sheet:	Tracks the field forms by individual site ID; also includes debatching, packing slip, and correction information.
BURP Lab Analysis Tracking Sheet:	Tracks the macro/fish samples and lab analysis forms by batch number.
BURP Field Form Error/Note Sheet:	Lists the errors found on each form.
BURP Crew Information:	Used to compile information on the most common errors made by each crew; also used when writing memos to the crews to remind them of certain procedures.
Debatch Slip:	Comprised of two differently colored, but identical pieces of paper. One is attached to the returned field form and the other is kept in the Central Office as a record.

BURP Field Batch Tracking Sheets

-Original

-Example

Beneficial Use Reconnaissance Project
Field Form Batch Tracking Sheet

c:\burp97\FFBTS

Audited:

Sent to DP:

Rec'd from DP:

Batch #: ______________

# of forms: _________

SITE ID #	DATE RECEIVED	DATE DEBATCHED	DATE REBATCHED	NEW BATCH #	NOTES

Beneficial Use Reconnaissance Project
Field Form Batch Tracking Sheet

c:\burp97\FFBTS

Audited: 97-8-11 CS
Sent to DP: 97-10-21 BE
Rec'd from DP:

Batch #: FB11

# of forms: 18

SITE ID #	DATE RECEIVED	DATE DEBATCHED	DATE REBATCHED	NEW BATCH #	NOTES
97SWIROB24	97-7-21				
97SWIROB25	97-7-21				
97SWIROB26	97-7-21				
97SWIROB27	97-7-21				
97SWIROB28	97-7-21				
97SWIROB29	97-7-21				
97SWIROB30	97-7-21				
97SWIROB31	97-7-21				
97SWIROB32	97-7-21	97-7-22	97-8-1	FB15	
97SWIROB33	97-7-21				
97SWIROB34	97-7-21				
97SWIROB35	97-7-21				
97SWIROB36	97-7-21				
97SWIROB37	97-7-21				
97SWIROB38	97-7-21				
97SWIROB39	97-7-21				
97SWIROB40	97-7-21	97-7-22	97-8-1	FB15	
97SWIROB41	97-7-21				

BURP Field Form Tracking Sheets

-Original

-Example

BENEFICIAL USE RECONNAISSANCE PROJECT FIELD FORMS
1996 Tracking Sheet

c:\burp96\ffts

SITE ID	FB	DEBATCH INFO				PACKING SLIP #			LAB BATCH #			COPIED CORR	SENT CORR	NOTES
		Deb'd	Sent	Rec'd	New FB	Bugs	Fish	Algae	Bugs	Fish	Algae			

NCIRO A Page 1

BENEFICIAL USE RECONNAISSANCE PROJECT FIELD FORMS
1997 Tracking Sheet

c:\burp97\FFTS

SITE ID	FB	DEBATCH INFO				PACKING SLIP #			LAB BATCH #			COPIED CORR	SENT CORR	STREAM NAME/NOTES
		Deb'd	Sent	Rec'd	New FB	Bugs	Fish	Algae	Bugs	Fish	Algae			
97NCIROA01	05					1630			LB11			97-7-17	97-7-17	Indian
97NCIROA02	05					1630	1901		LB11	LB03		97-7-17	97-7-17	Cow
97NCIROA03	05					1630	1901		LB11	LB03		97-7-17	97-7-17	Allison (U)
97NCIROA04	05					1630	1901		LB11	LB03		97-7-17	97-7-17	Allison (L)
97NCIROA05	05					1630	1901		LB11	LB03		97-7-17	97-7-17	Squaw
97NCIROA06	12					1631	1901		LB25	LB03		97-7-23	97-7-28	Van Buren
97NCIROA07	12					1631	1901		LB22	LB03		97-7-23	97-7-28	Turnbull
97NCIROA08	12					1631	1901		LB07	LB03		97-7-23	97-7-28	Little Slate
97NCIROA09	12					1632	1902		LB22	LB03		97-7-23	97-7-28	Rock
97NCIROA10	12					1632	1902		LB22	LB03		97-7-23	97-7-28	Grave
97NCIROA11	12					1632	1902		LB22	LB03		97-7-23	97-7-28	Cottonwood
97NCIROA12	12					1632	—		LB11	—		97-7-23	97-7-28	Race
97NCIROA13	20					1903	1634		LB25	LB17		97-8-13	97-8-13	Rhett
97NCIROA14	20					1903			LB11			97-8-13	97-8-13	~~Upper~~ Big (U)
97NCIROA15	20					1903			LB26			97-8-13	97-8-13	~~Upper~~ Big (UU)
97NCIROA16	20					1903			LB48			97-8-13	97-8-13	Eutopia
97NCIROA17	20					1903			LB45			97-8-13	97-8-13	Little Mallard
97NCIROA18	20					1903			LB45			97-8-13	97-8-13	McGuire
97NCIROA19	20					1904	1907		LB57	LB18		97-8-13	97-8-13	Little Boulder
97NCIROA20	20					1904	—		LB45	—		97-8-13	97-8-13	Slate (U)
97NCIROA21	20					1904	1907		LB57	LB18		97-8-13	97-8-13	Little Slate (L)
97NCIROA22	20					1904			LB57			97-8-13	97-8-13	Warren (U)
97NCIROA23	20					1904			LB35			97-8-13	97-8-13	Warren (L)

BURP Lab Analysis Tracking Sheets

-Original
-Macroinvertebrate Example
-Fish Example

Beneficial Use Reconnaissance Project
Lab Analysis Batch Tracking Sheet

c:\burp97\LABTS

Batch #: _____

# of forms: _____ # of sites: _____

SITE ID #	FB	DATE RECEIVED FROM LAB			DATE SENT TO LAB BY REGION			DATE RECEIVED BY LAB			DATE AUDIT	DATE SENT TO DP			DATE RECEIVED FROM DP		
		bugs	fish	algae	bugs	fish	algae	bugs	fish	algae		bugs	fish	algae	bugs	fish	algae

Beneficial Use Reconnaissance Project
Lab Analysis Batch Tracking Sheet
c:\burp97\LABTS

Batch #: LB04

(M)

# of forms: 25 # of sites: 16

SITE ID #	FB	DATE RECEIVED FROM LAB			DATE SENT TO LAB BY REGION			DATE RECEIVED BY LAB			DATE AUDIT	DATE SENT TO DP			DATE RECEIVED FROM DP		
		bugs	fish	algae	bugs	fish	algae	bugs	fish	algae		bugs	fish	algae	bugs	fish	algae
97EIRO L001	02	97.9.17			97-6-25			97-6-25			97-10-9						
97EIRO L001	02	97.9.17			97-6-25			97-6-25									
97EIRO L001	02	97.9.17			97-6-25			97-6-25									
97EIRO L006	02	97.9.17			97-6-25			97-6-25									
97EIRO L007	02	97.9.17			97-6-25			97-6-25									
97EIRO L008	02	97.9.17			97-6-25			97-6-25									
97EIRO L008	02	97.9.17			97-6-25			97-6-25									
97EIRO L008	02	97.9.17			97-6-25			97-6-25									
97EIRO L008	02	97.9.17			97-6-25			97-6-25									
97EIR009	02	97.9.17			97-6-25			97-6-25									
97EIRO L015	15	97.9.17			97-6-25			97-6-25									
97EIRO L016	02	97.9.17			97-6-25			97-6-25									
97EIRO L017	15	97.9.17			97-6-25			97-6-25									
97EIRO L018	15	97.9.17			97-6-25			97-6-25									
97EIRO L019	15	97.9.17			97-6-25			97-6-25									
97EIROM001	03	97.9.17			97-6-25			97-6-25									
97EIROM002	03	97.9.17			97-6-25			97-6-25									
97EIROM003	03	97.9.17			97-6-25			97-6-25									
97EIROM004	03	97.9.17			97-6-25			97-6-25									
97EIROM004	03	97.9.17			97-6-25			97-6-25									
97EIROM004	03	97.9.17			97-6-25			97-6-25									
97EIROM005	03	97.9.17			97-6-25			97-6-25			97-10-9						

Beneficial Use Reconnaissance Project
Lab Analysis Batch Tracking Sheet
c:\burp97\LABTS

Batch #: LB13

# of forms: 16 # of sites: 16

SITE ID #	FB	DATE RECEIVED FROM LAB			DATE SENT TO LAB BY REGION			DATE RECEIVED BY LAB			DATE AUDIT	DATE SENT TO DP			DATE RECEIVED FROM DP		
		bugs	fish	algae	bugs	fish	algae	bugs	fish	algae		bugs	fish	algae	bugs	fish	algae
97NCIROC37	36		? ×			97-8-25			97-8-26		97-11-20						
97NCIROC36	36					97-8-25			97-8-26								
97NCIROC35	36					97-8-25			97-8-26								
97NCIROC34	36					97-8-25			97-8-26								
97NCIROC33	27					97-8-25			97-8-26								
97NCIROC32	27					97-8-25			97-8-26								
97NCIROC31	27					97-8-25			97-8-26								
97NCIROC29	27				97-8-25 →				97-8-26								
97NCIROC28	27				97-8-25 →				97-8-26								
97NCIROC27	27				97-8-25 →				97-8-26								
97NCIROC26	27				97-8-25 →				97-8-26								
97NCIROA38	36					97-8-25			97-8-26								
97NCIROA37	36					97-8-25			97-8-26								
97NCIROA36	36					97-8-25			97-8-26								
97NCIROA35	36					97-8-25			97-8-26								
97NCIROA34	36		? ×			97-8-25			97-8-26		97-11-20						

× no date stamp

BURP Field Form Error/Note Sheets

-Original

-Example

BURP Field Form Error/Note Sheet

Site ID: _____ **Batch: FB**_____ **Date:** _____ **BE CS RL**

Page #:	**Comment:**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

FB05

BURP Field Form Error/Note Sheet

Site ID: 97SW1ROB09 Batch: FB05 Date: 97-6-27 (CS) RL

Page #:	Comment:
1	dec. sec. — wrong format
1	no lat/long conf.
1	house is not a perm. landmark
4	Wolman miscount
5	no photo roll name
6	put only totals in SR cond. boxes
6	pool box — residual depth missing, avg sub. missing
—	map needs scale

BURP Crew Information

-Original

-Example

BURP Crew Information

Crew:

Forms _____ through _____

Date:

Description of error	Pg	Tallied Errors

Comments:

Action:

BURP Crew Information

Crew: SEIRO

FB22

Date: 97-8-14

Forms 44 through 72

Description of error	Pg	Tallied Errors
* No map scale	—	𝍸 𝍸 ||||
* Improper location description	1	𝍸
Incorrect pool codes	6	𝍸 ||
Discharge math errors	3	𝍸 |
PLSG incorrect	1	||||
GWW ≠ WW of T1-T3 ÷ 3	1/6	||
No macro sample labels	3	||||

Comments:

* memo

If there's more than one road crossing nearby, don't use culvert/unnamed bridge, etc. in location

Explain new discharge procedure (FLOWCAL7)

Action:

Memo sent 970917

BURP Debatch Slips

-Original (top half of page)
-Example (bottom half of page)

IDAHO DEPARTMENT OF HEALTH & WELFARE
Division of Environmental Quality
Beneficial Use Reconnaissance Project
'D' SLIP

SITE # _____ EXTRACTED BY _____

FIELD FORMS _____ or LAB ANALYSIS FORM _____

EXTRACTED FROM BATCH # _____ DATE EXTRACTED _____

COMMENTS: _____

*Please return 'D' stamped copies.

sc c: \burp\dslip.frm

IDAHO DEPARTMENT OF HEALTH & WELFARE
Division of Environmental Quality
Beneficial Use Reconnaissance Project
'D' SLIP

SITE # 97SW1R0B40 EXTRACTED BY BE

FIELD FORMS X or LAB ANALYSIS FORM _____

EXTRACTED FROM BATCH # FB11 DATE EXTRACTED 970722

COMMENTS: Pg 6 → (streambank condition) Right bank measurements only equal 98%.

*Please return 'D' stamped copies.

sc c: \burp\dslip.frm

5

Auditing Bench Sheets for Macroinvetebrate Data

The BURP crews collect macroinvertebrates as part of the stream monitoring procedure and send them to professional taxonomists to be identified and counted. After the lab identifies and counts the bugs, the lab sheets are sent to Central Office. The procedure we use to QA/QC the lab sheets is a three step process; receive them, doublecheck the assigned taxon codes, and doublecheck the header information.
Procedure:

- ☐ Stamp the date received on the form.

- ☐ Enter the Site Id's of each form onto the "Lab Analysis Tracking Sheet". A group of lab forms is called a batch. Try not to make the batches have more than 22 lab forms (the number of lines in one page of the clipboard). Try to find natural breaks which can be used to separate the batches, such as by region or crew. Each page on the clipboard should be a different batch. Batches should be numbered, starting with one, by writing "LB__" in the upper right of the page in the space provided.

- ☐ Sometimes there is more than one lab sheet for a Site Id. The BURP crews collect three macroinvertebrate samples at each site and the taxonomists composite them into one result. However, occasionally the lab cannot composite the three samples or one or more samples are missing. In these instances there will be more than one lab sheet for a particular Site Id. Each lab sheet corresponds to one transect and should be written down. The Lab Analysis Tracking Sheet is a list of forms received from the lab, not Site Id's received from the lab. At the top of each tracking sheet are two spaces: One space for number of forms and one space for number of sites. (Be sure to enter the proper number in each space, taking into account the uncomposited lab sheets.)
  The best way to recognize that a site's macroinvertebrates have been composited is to look at the number of lab tracking stickers in the "IDHW Central Lab Log No." box. If there's only one lab tracking sticker then the site is not composited. However, if there are three lab tracking stickers, the site has been composited.

- ☐ Once a batch has been established, attach a blue batch cover sheet to the batch with a paper clip or black spring clip. Write the batch number on the cover sheet in the following form: "LB__". Write the year in the upper right of the cover sheet because sometimes lab

sheets don't come back from the lab in the year in which they were sent to the lab.

The next step is to double check the taxon codes the taxonomists assigned to each species. DEQ has a list of codes for each taxonomic group of macroinvertebrates that must be assigned correctly. There are four lists: one alphabetically ordered, one numerically ordered, one seperated by order and numerically ordered, and a list of new bugs.
Procedure:

- For each species on the lab sheet, make sure the taxon code matches the number on one of the three DEQ lists. It's up to the individual whether they prefer to look on the alphabetical or numerical lists. Regardless of the list used, the most important thing to remember is to make sure the taxon code is correct because the data will be entered into the database. The lab error rate is less than 5%, therefore attention to detail is mandatory.

- Sometimes a taxon code is listed twice on the lab sheet. For instance, there might have been 29 nymphs and 13 pupae present. The lab seperates the life forms into two groups for orders with complete metamophisis only. DEQ only wants to know the species information, regardless of life form. Draw a single line through one of the repetitious taxa, sum both life forms, and write that sum into the space by the taxon code that was not crossed out. For the example, the "pupae" line could be crossed out, and 42 should be written in the space for the nymph. Only one entry per species per lab sheet is allowable.

- Occasionally a bug is entered without a taxon code. This is a special case, and the following procedure should be followed:

    - Make sure the bug is not on the bug list anywhere, alphabetically, numerically, or otherwise.

    - Look on the list of New Bugs to make sure it isn't there either

If the new taxon is not on the above two lists, it will need to be added to the "New Bugs" list.

    - Look in Aquatic Insects of North America by Merritt and Cummins to make sure what was written on the lab sheet is actually a new species for our list and not a misspelled or hard to decipher spelling that is already on one of our lists.

When a species is determined to be one that is not on any of our lists, we need to assign it a preliminary taxon code.

    - Write the species name on the "New Bugs" list

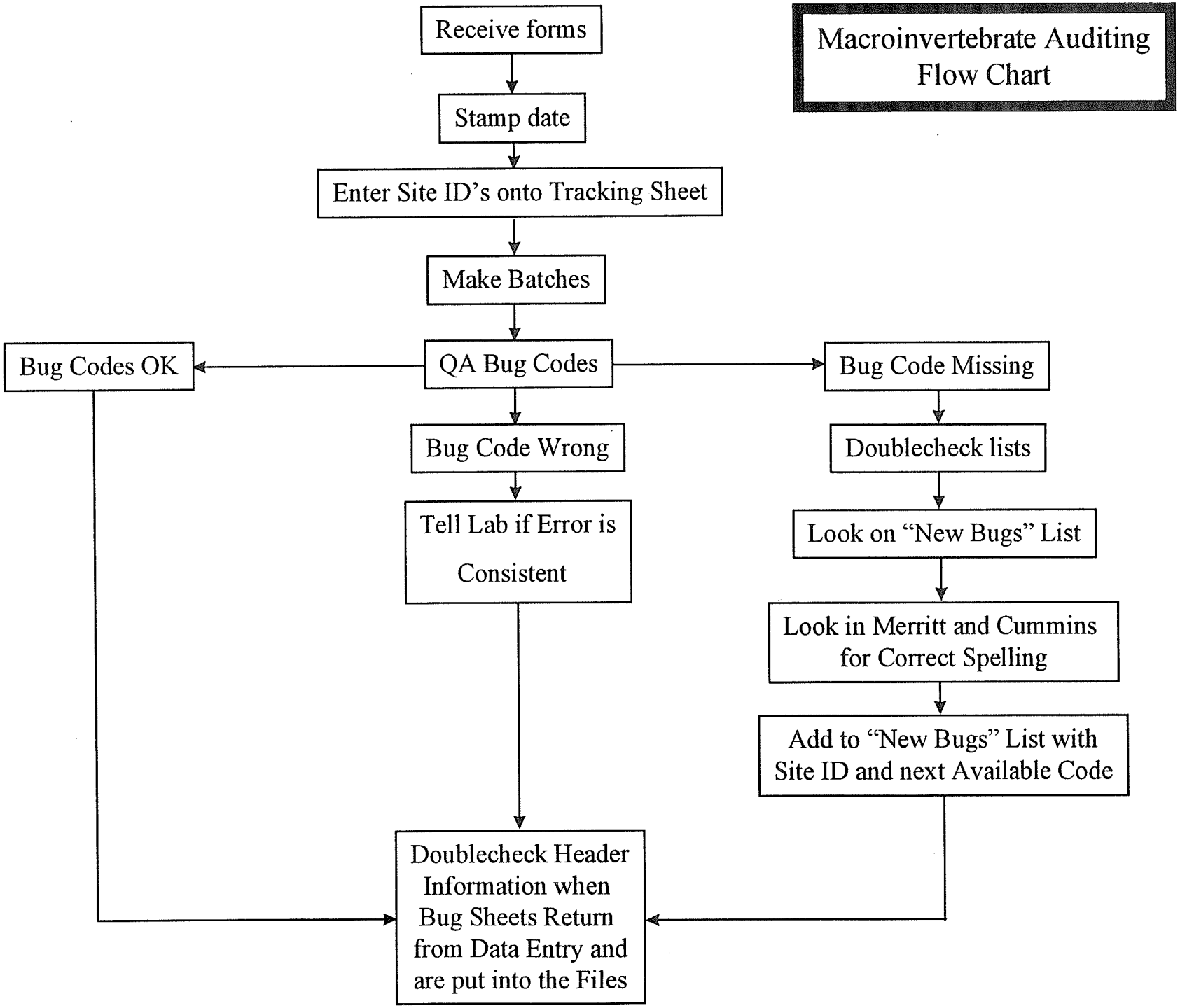
- ☐ Write the Site ID next to the species name. **This is very important because it gives a tracking avenue in case an error was made.**

- ☐ Write the next available numerically ordered number (taxa code) following the taxon and the Site ID.

Lastly, double check the information in the header at the top of the lab form to be sure it matches what is written on the lab form. Obviously, the most important information that must be checked is the Stream Name and Site ID.

- ☐ The most convenient time to check this information is after the bug sheets have come back upstairs from data entry and are ready to be put in the file with the previously entered field forms. Since only the date and Site Id are needed to enter the bugs into the database, the other header information, namely the GNIS-corrected stream name and locational information, can be checked as the bugs sheets are being dropped into their file resting place. This ensures that the bug sheets match the field forms which match the database.

Macroinvertebrate Auditing Flow Chart



Division of Environmental Quality Macroinvertebrate Data Sheet

112 143/112 96NCIROB24

Field Information - Shaded areas must be completed before submittal of sample

DEQ Project Code	[redacted]-8209-[redacted]				
Name of Water Body	Hatwai Cr (lower)	Site ID Nº:	[redacted]	96NCIROB24	
Location Description: permanent Landmarks	0.6 mile from hwy 1249 up Roy Bush's private drive				
Station or subsample Nº:	County:	Township	Range:	Section:	Quarter:
T1, T2, T3	Latah	36N	5W	26	SE-NE-SE
Elevation:	Collector(s) First (or initial) & Last Names(s):				Sample Method:
780 ft	C. Shiflett				Hess
Collection date (YY/MM/DD)	Collection Time:			Latitude/Longitude	
96/07/08	10:20 - 12:30 - 4:15			46°26'01.2N" / 116°55'08.34"	
Sampled Grids/Total	Habitat Sampled	Flow Conditions		Report Results to: Lisa Wertz	
	Riffle	low		Idaho DEQ	
Sample Effort (min)	Sample Area (m^2)	Analysis Requested		1118 "F" Street	
5 min.	0.09	100/300/500/ALL		Lewiston, ID 83501	

Identifying Lab Information:

Lab Name: W. BOLLMAN	Date into Lab:	Date Reported	IDHW Central Lab Log Nº: 40996-5717 M16
Taxonomist:		Remarks: filamentous algae dominates "substrate"	M16 - 16 / 40996-5718 M17
			40996-5719 M18 ENVIRO
Sorter(s) First (or initial) & Last name(s)	Total Nº Grids 18	Nº Grids Picked 3	Est. Nº Macros

Taxon	Taxon Code	Total No.	ID conf	Taxon	Taxon Code	Total No.	ID conf
Diptera				Trichoptera			
Chironomidae	319	33		Hydropsyche sp.	198	54	
Simuliidae (pupae)	301	5		Cheumatopsyche sp.	197	4	
Simulium sp.	303	80		Parapsyche sp.	193	2	
Hemerodromia sp.	308	6		Hydroptila sp.	182	3	

Composited Macroinvertebrate Bench Sheet: Notice the space for the "IDHW Central Lab Log No.:" has three numbers, which means that all three transects are on this form.

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Stream Name: Hatwai Cr (lower) Site ID Nº: 96NCIROB24 Date: 96/07/08

Division of Environmental Quality Macroinvertebrate Data Sheet

Name of Waterbody:

Site Id Nº :

Taxon	Taxon Code	Total No.	ID conf
Plecoptera			
Amphinemura sp.	82	1	
Skwala sp.	126	1	
Ephemeroptera			
Tricorythodes minutus	458	2	
Paraleptophlebia sp	63	3	
Baetis sp. (imm.)	17	220	
Baetis tricaudatus	20	76	
Diphetor hageni	679	2	
Coleoptera			
Optioservus sp.	267	1	
Dytiscidae (larva)	251	1	

Taxon	Taxon Code	Total No.	ID conf
Hirudinea			
Turbellaria			
Gastropoda			
Physidae	432	1	
Valvatidae	637	1	
Crustacea			
Other			
Oligochaeta	418	2	
Homoptera	455	2	

Stream Name: Hatwai CR (lower) Site ID Nº 96NCIROB24 Date: 961071 08

Division of Environmental Quality Macroinvertebrate Data Sheet

11-27-96 ... 11/7/96

Field Information - Shaded areas must be completed before submittal of sample

DEQ Project Code	. 8 2 0 9 .
Name of Water Body	Moose Cr. Middle
Site ID Nº:	96NCIROB23
Location Description: permanent Landmarks	F.S. Rd 381, past Moose Cr. F.S. 1st left 1.1 miles to Rd block ... in Meadow

Station or subsample Nº:	County:	Township	Range:	Section:	Quarter:
T1, T2, T3	Latah	41N	1W	20	NE, SE, SE

Elevation:	Collector(s) First (or initial) & Last Names(s):	Sample Method:
920 ft.	C. Shiflett * T1, T3 each have 4 bottles T2-one sample	Hess

Collection date (YY/MM/DD)	Collection Time:	Latitude/Longitude
96/07/03	10:00, 10:45, 11:00	46°52'56.51N / 116°28'17.5W

Sampled Grids/Total	Habitat Sampled	Flow Conditions	Report Results to:
	run, run, run	low	Lisa Wertz
			Idaho DEQ

Sample Effort (min)	Sample Area (m²)	Analysis Requested	
5 minutes	2.09	100/300/(500)/ALL	1118 "F" Street
			Lewiston, ID 83501

Identifying Lab Information:

Lab Name:	Date Into Lab:	Date Reported	IDHW Central Lab Log Nº: 40996-5714M13 ENVIRO
Taxonomist: W. BOLLMAN		Remarks: much debris; excessive vegetation / preservative dilution	M13...
Sorter(s) First (or initial) & Last name(s)		Total Nº Grids 16	Nº Grids Picked 16 ALL

Est. Nº Macros

Taxon	Taxon Code	Total No.	ID conf	Taxon	Taxon Code	Total No.	ID conf
Diptera				Trichoptera			
Chironomidae	319	7					
Tabanidae	318	4					

Noncomposited Macroinvertebrate Bench Sheet: Notice the space for the "IDHW Central Lab Log No.:" has only one number. Only one of the three transects was entered onto this form.

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Stream Name: Moose Cr. (Middle) Site ID Nº: 96NCIROB23 Date: 96/07/03

Division of Environmental Quality Macroinvertebrate Data Sheet

Name of Waterbody:

Site Id Nº :

Taxon	Taxon Code	Total No.	ID conf
Plecoptera			
Pteronarcella sp.	66	2	
Perlodidae (imm.)	114	1	
Ephemeroptera			
Ephemerellidae (imm)	36	6	
Baetidae (damaged)	16	10	
Coleoptera			
Cleptelmis sp.	259	1	

Taxon	Taxon Code	Total No.	ID conf
Hirudinea			
Turbellaria			
Gastropoda			
Crustacea			
Other			
Oligochaeta	418	19	
Sialis sp.	149	2	

Stream Name: Moose Cr. Middle Site ID Nº: 96NCIROB23 Date: 96 10 7 03

Division of Environmental Quality Macroinvertebrate Data Sheet

11-27-96

Field Information - Shaded areas must be completed before submittal of sample

112796

DEQ Project Code	. 8 2 0 9 .		96NCIROB23
Name of Water Body	Moose Cr. Middle	Site ID Nº:	
Location Description: permanent Landmarks	F2. Rd 381 ... Moose Cr. ... 1st left ... to ...		

Station or subsample Nº:	County:	Township	Range:	Section:	Quarter:
T1, T2, T3	Latah	41N	1W	20	...

Elevation:	Collector(s) First (or initial) & Last Names(s):	Sample Method:
920 ft.	C. Shiflett * T1, T3 each have 4 bottles T2=one sample	Hess

Collection date (YY/MM/DD)	Collection Time:	Latitude/Longitude
96/07/23	~~10:00~~, 10:45, ~~11:00~~	46°52'56.5N / 116°28'17.5W

Sampled Grids/Total	Habitat Sampled	Flow Conditions	Report Results to: Lisa Wertz
	run, run, run	low	Idaho DEQ
Sample Effort (min)	**Sample Area (m²)**	**Analysis Requested**	1118 "F" Street
5 minutes	2.09	100/300/(500)/ALL	Lewiston, ID 83501

Identifying Lab Information:

Lab Name:	Date Into Lab:	Date Reported	IDHW Central Lab Log Nº:
W. BOLLMAN			M... 40996-5715M14 ENVIRO
Taxonomist:		Remarks: much damage: excessive vegetation/ECOM dilution	
Sorter(s) First (or initial) & Last name(s)		Total Nº Grids 20	Nº Grids Picked 20 ALL / Est. Nº Macros

Taxon	Taxon Code	Total No.	ID conf	Taxon	Taxon Code	Total No.	ID conf
Diptera				Trichoptera			
Chironomidae	319	23		Hydroptila sp.	182	5	
Tabanidae	318	5		Lepidostoma sp.	237	1	

Noncomposited Macroinvertebrate Bench Sheet: Notice the space for the "IDHW Central Lab Log No.:" has only one number. Only one of the three transects was entered onto this form.

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Stream Name: Moose Cr. (Middle) Site ID Nº: 96NCIROB23 Date: 96/07/23

Division of Environmental Quality Macroinvertebrate Data Sheet

Name of Waterbody:

Site Id Nº :

Taxon	Taxon Code	Total No.	ID conf
Plecoptera			
Ephemeroptera			
Ephemerellidae (imm)	36	22	
Paraleptophlebia sp.	63	33	
Centroptilum sp. (4 retained)	22	21	
Baetidae (4 retained)	16	19	
Coleoptera			
Dytiscidae (imm.)	251	1	

Taxon	Taxon Code	Total No.	ID conf
Hirudinea			
Turbellaria			
Gastropoda			
Planorbidae	436	6	
Physidae	432	1	
Crustacea			
Hyalella azteca	446	18	
Pacifastacus sp.	561	4	
Other			
Oligochaeta	418	7	
Sialis sp.	149	14	
Sphaeriidae	567	1	
Corduliidae	832	2	
Aeshnidae	4	2	

Stream Name: Moose Ck. Middle Site ID Nº: _ 96NCIROB23 _ Date: 96 10 7 10 3

Division of Environmental Quality Macroinvertebrate Data Sheet

Field Information - Shaped areas must be completed before submittal of sample

112196.02

DEQ Project Code	. 8 2 0 9 .
Name of Water Body	Moose Cr. Middle
Site ID Nº:	96NCIROB23
Location Description: permanent Landmarks	F.S. Rd 381, past Moose's ... 1st left 1.1 mile to Rd block - walk in Meadow

Station or subsample Nº:	County:	Township	Range:	Section:	Quarter:
T1, T2, T3	Latah	41N	1W	20	NE, SE, SE

Elevation:	Collector(s) First (or initial) & Last Names(s):	Sample Method:
920 ft.	C. Skiflett * T1, T3 each have 4 bottles T2 = one sample	Hess

Collection date (YY/MM/DD)	Collection Time:	Latitude/Longitude
96/07/03	~~10:00~~, 10:45, 11:00	46°52'56.5N / 116°28'17.5W

Sampled Grids/Total	Habitat Sampled	Flow Conditions	Report Results to: Lisa Wertz
	run, run, run	low	Idaho DEQ

Sample Effort (min)	Sample Area (m²)	Analysis Requested	1118 "F" Street
5 minutes	2.09	100/300/(500)/ALL	Lewiston, ID 83501

Identifying Lab Information:

Lab Name: W. BOLLMAN	Date Into Lab:	Date Reported	IDHW Central Lab Log Nº: 40996-5716 M15 ENVIRO M15... 15
Taxonomist:		Remarks: excessive vegetation → preservative dilution	
Sorter(s) First (or initial) & Last name(s)		Total Nº Grids 16	Nº Grids Picked 16 ALL / Est. Nº Macros

Taxon	Taxon Code	Total No.	ID conf	Taxon	Taxon Code	Total No.	ID conf
Diptera				Trichoptera			
Chironomidae	319	30		Hydroptila sp.	182	3	
Tabanidae	318	2					
Empididae (pupa)	305	1					
Hexatoma sp.	286	1					

Noncomposited Macroinvertebrate Bench Sheet: Notice the space for the "IDHW Central Lab Log No.:" has only one number. Only one of the three transects was entered onto this form.

RECEIVED
NOV 05 1996
Div. of Environmental Quality
Community Programs

Stream Name: Moose Cr. (Middle) Site ID Nº: 96NCIROB23 Date: 96/07/03

Division of Environmental Quality Macroinvertebrate Data Sheet

Name of Waterbody:

Site Id Nº :

Taxon	Taxon Code	Total No.	ID conf
Plecoptera			
Pteronarcella sp.	66	3	
Perlodidae (imm.)	114	2	
Ephemeroptera			
Paraleptophlebia sp.	63	15	
Ephemerellidae (imm.)	36	15	
Baetidae	16	17	
Centroptilum sp.	22	2	
Coleoptera			
Hirudinea			
Turbellaria			
Gastropoda			
Crustacea			
Pacifastacus sp.	561	3	
Hyalella azteca	446	12	
Other			
Oligochaeta	418	22	
Acari	453	7	
Sphaeriidae	567	5	
Corduliidae	832	2	
Sialis sp.	149	9	

Stream Name: Moose Cr. Middle Site ID Nº: 96NCIROB23 Date: 9610710 23

6

Auditing Fish Forms

The BURP crews capture fish at selected BURP sites. They record the type of fish, length, and sometimes the weight. They will also typically voucher a representative of each species and any fish with anomalies. The vouchers are sent to a professional taxonomist for positive identification and the results are sent to the Central Office. In the meantime we will have received from the Regional Office their fish field forms containing the header information and nonvouchered fish information.
The tracking and auditing procedure is as follows:

- Stamp the date received on all the forms. The forms from the lab will usually have different dates than the forms from the regions.

- At least four pages are necessary per site: A header page, a fish collection data form, a page for size class information, and the page from the lab with the taxonomist's signature. Staple the pages in this order. Sometimes duplicates are received. These are not necessary to keep and can be recycled. Any extraneous pages, such as copies of crew notebooks, can also be recycled as long as the information on those pages is on the three kept pages. Some crews attach a map pinpointing their location. Staple it to the back of the forms. This is positive proof of their location.

- Enter a group of fish forms onto one of the sheets on the "Lab Analysis Tracking Sheet" clipboard. We call these groups of forms "batches". Try not to make the batches more than 22 forms, the number of lines on the tracking sheet. Attach a blue cover sheet on the batch and fill out the information on it.

The batch is now ready to be QA'd:

- A "DEQ Fish Data Entry Form"is needed for every fished site.

- Fill out the Site ID, Waterbody, Date, Pass number, and effort at the top of the form for a site, taking the information from the field form header. **The year of the Site ID might not equal the date collected. For example, 93SWIROA03 may have been collected in 1997.**

The following section explains how to fill out the Taxa code, ID confidence, and size class information. Beware that each crew of each region has filled out their fish forms slightly different. The info should all be there, but sometimes needs more in-depth examination.

Step 1:

- ☐ Decide on a species to work with. Follow the procedure for each species at a site. As an example, Rainbow trout, *Oncorhynchus mykiss*, taxa code 10, will be used. All fish and their respective taxa codes are on the DEQ Fish List.

- ☐ For this example, 20 rainbows were caught and 5 were vouchered. In the paperwork for the site, there should be length (and sometimes weight) measurements for all the taxa code 10 and a "fish collection data form" which shows which fish were vouchered.

Step 2:

- ☐ Label the column on the "DEQ fish data entry form". At the top of the first column write a "10", the species code for trout, followed by a "/" and the confidence level of the person who identified the fish:

- ☐ Confidence levels are A, B, C, or D as follows:

  A: 95%. Bona fide fish taxonomist on field crew and/or representative of all species vouchered and taxonomy done by a bona fide fish taxonomist. Taxonomist must be identified. No visual estimates.

  B: 90%. Experienced, full time fisheries biologist on collection crew and/or only some of the species vouchered and taxonomy done by a bona fide fish taxonomist. Fisheries biologist and taxonomist must be identified. No visual estimates.

  C: >80%. Crew made up of individuals familiar with species. At least one crew member must be identified. Species were not vouchered. No visual estimates.

  D: 80%. No confidence or confidence unkown. May be due to such things as: 1) taxonomist, fisheries biologist, or crew members unknown; 2) visual estimates only; 3) poor specimen condition.

Step 3:

- ☐ Next, put tickmarks in the proper length categories for each fish that was identified and measured by the lab. Total the number of ticks and write that total in the box with the tickmarks. Circle the total. At the bottom of the column, record and circle the total number of fish that were vouchered.

- ☐ Determine if the vouchered fish were inclusive or exclusive of the counts of nonvouchered fish. This can be done by comparing totals of fishes in each species or by comparing lengths of fishes.

- ☐ The next column of the "DEQ fish data entry form" is going to be used for taxa code 10's that weren't vouchered. Write a "10" followed by a "/" and the confidence (which is usually "D" because the crews usually aren't fish taxonomists).

- ☐ Put tickmarks in the appropriate length categories for each fish, sum the tickmarks and circle the totals. At the bottom of the column, record and circle the total number of fish that were not vouchered.

  *Sometimes the crews don't measure the fish, ie. when 134 Redside shiners, taxa code 40, between 30mm and 50mm were caught. In this case, write the total at the bottom of the column and write "134 no lengths" vertically in the column.

- ☐ The sum of the two columns regarding rainbow trout, taxa code 10, should equal the total number of fish caught. ie., vouchered fish + nonvouchered fish = total fish caught. Double check the total number of fish on the "DEQ fish data entry form" with the totals from the field sheets.

- ☐ Occasionally the taxonomist makes remarks about the fish on his form. Next to the checkmark on the "DEQ fish data entry form" for the fish with the remark, an abbreviation of the remark must be written and circled. These remarks need to be noted with the following abreviations:

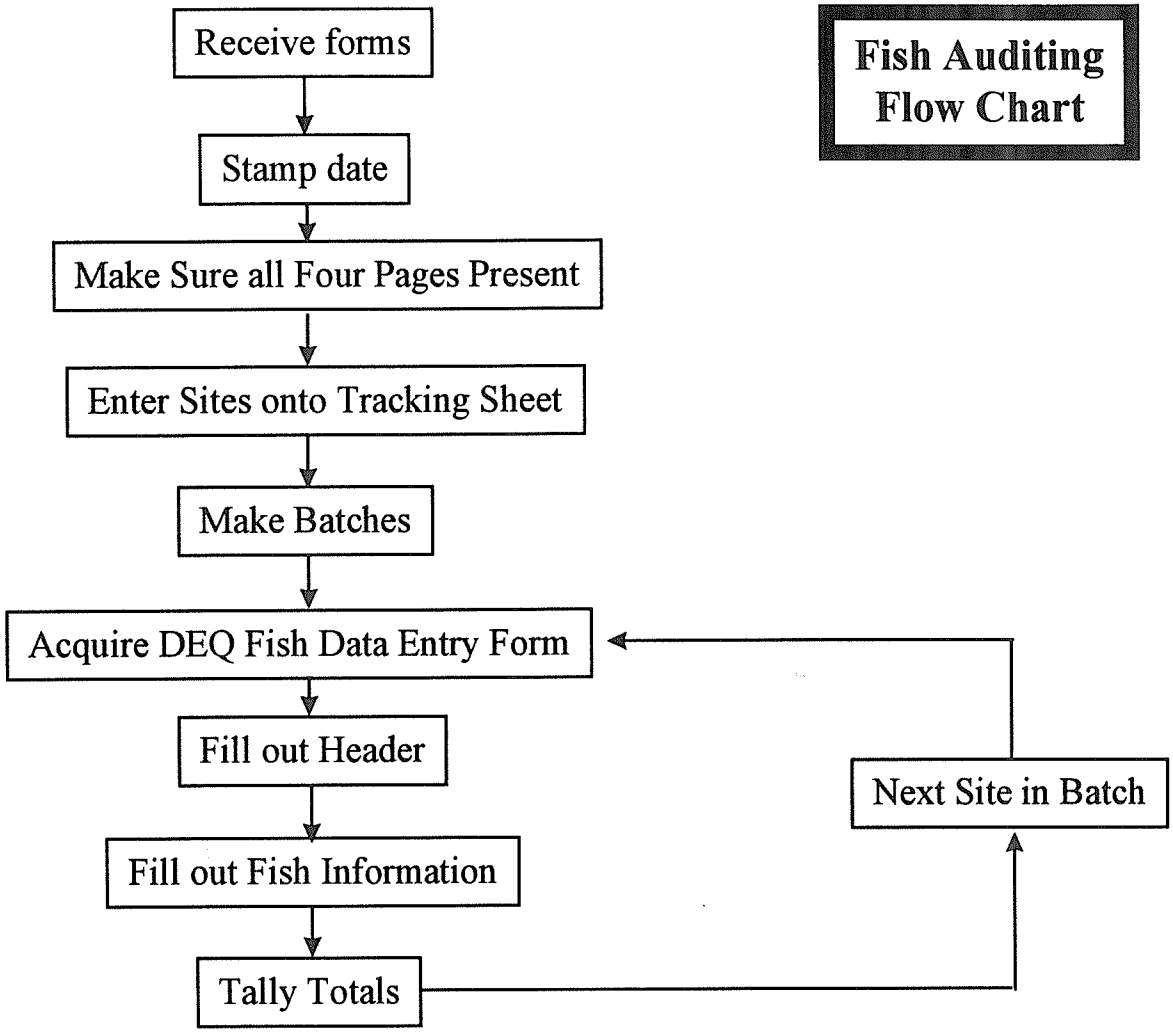
  A: Anomolies. Usually black spot disease, other diseases, or lesions
  J: Juveniles

- ☐ Repeat the procedure for each species at that site.

  *Sometimes the crews note the number of tadpoles and other animals they see in the water. These should not be added to the "DEQ Fish Data Entry Form" since they are not fish.

- ☐ When all the fish species are accounted for, the "DEQ fish data entry form" should be stapled to the front of the other four pages regarding that site.

Fish Auditing Flow Chart



The Five Pages Necessary for a Fished Site to be Complete:

-Data Entry Form
-Header Sheet
-Fish Collection Data Form
-Size Classification Sheet
-Lab Sheet with Taxonomist's Signature

1997 Beneficial Use Reconnaissance Project Field Forms, Idaho Division of Environmental Quality

Fish Collection Data Form (reconnaissance)

reach length (m): 115 M | avg. reach width (m): 3.5M | method: ☐ visual, ☐ snorkel, ☑ electrofish (☑AC ☐DC)

conductivity (µS/cm): 60 µmhos | water clarity: turbid, (clear), stained | effort(s): Single Pass

species code*	species	total length (mm)	voucher (y/n)	total count	identification conf.**	anomalies ***	# of juveniles

Fish Collection Data Form Adapted from DEQ Protocol #6. * see 1996 training manual for updated codes** Fish confidence Codes: A (99.9%) - Must have fisheries taxonomist on collection crew or entire sample preserved and taxa work done by fisheries taxonomist (no visual estimate), B (99%) - Must have an experienced fisheries biologist on collection crew, or only part of sample preserved, C (90%) - Crew made up of individuals familiar with species, D (<90%) - No confidence or confidence unknown. *** Anomalies include parasites, deformities, frayed fins, etc.

Stream Name: Bumblebee Creek (Lower) Site ID Nº: 96NIRO0824 Date: 97,07,17

DEQ Fish Collection Record (Pass 1 of 1, effort 1196 seconds)

Total Length (mm)	Taxa Code/ID Confidence					
	Brook Trout	Cutthroat	Sculpin	Sculpin	Sculpin	Tadpoles
10-19						3Φ
20-29						
30-39			𝍸 𝍸 ||||			
40-49			𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸
50-59	II 3g		𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 ||||		
60-69	II 3g		𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸 |||		
70-79			𝍸 𝍸 𝍸 𝍸 𝍸 𝍸			
80-89			𝍸 𝍸 𝍸 𝍸			
90-99			𝍸 |||			
100-109	I 11g		|||			
110-119		II 10g	I			
120-129	II 22g					
130-139						
140-149						
150-159	||| 32g					
160-169						
170-179	||| 60g					
180-189						
190-199	II 70g					
200-209						
210-219	II 130g					
220-229	I 130g					
230-239	I 130g					
240-249						
250-259						
260-269						
270-279						
280-289						
290-299						
≥300 mm						

Stream Name: Bumblebee Creek (Lower) Site ID Nº: 96NIR0ΦB324 Date: 97,Φ7,17

1997 Beneficial Use Reconnaissance Project Field Forms, Idaho Division of Environmental Quality

Division of Environmental Quality Fish Voucher Data Sheet

Lab Name: **EcoAnalysts, Inc.** Date into Lab: **9/ 2/97** Taxonomist: **Dr. Richard Wallace** RPW

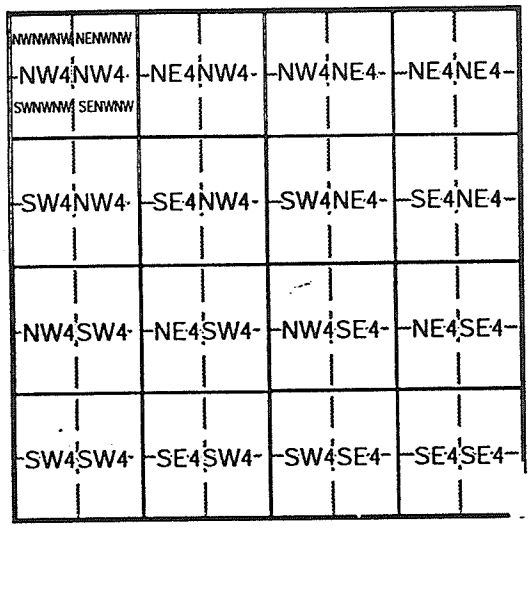
Stream name: **Bumblebee Cr** Site ID No: **96NIRO0B24** Date: **17July1997**

species code	species	total length (mm)	total count	ID confid	anomalies	# of juveniles
11	Oncorhynchus clarki	112	1	A	—	0
21	Salvelinus fontinalis	54, 55; 118	3	A	—	2
70	Cottus confusus	94	1	A	—	0

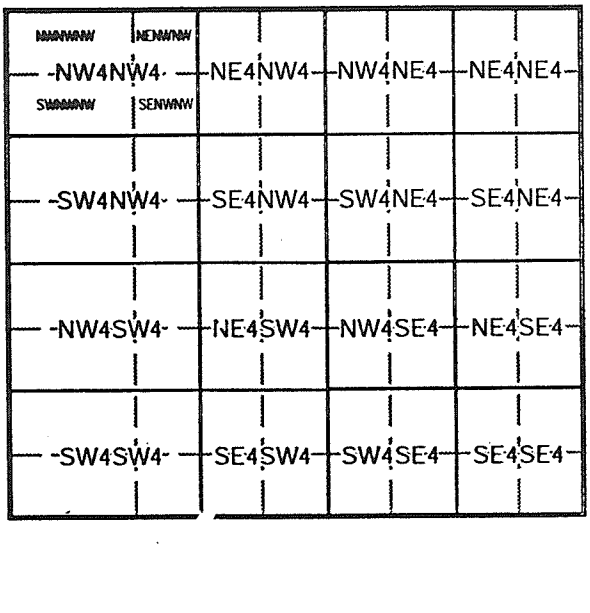
Appendix A: Official DEQ Public Land Survey Locator Template

OFFICIAL D.E.Q. P.L.S.S. LOCATOR TEMPLATE

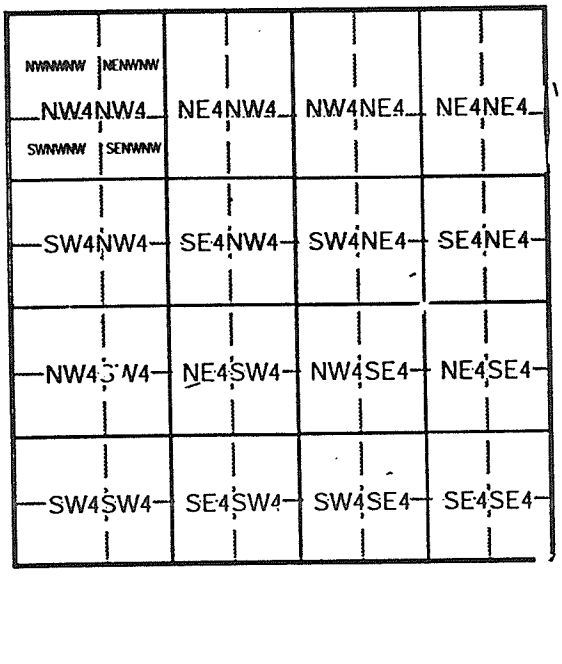
A Normal Section



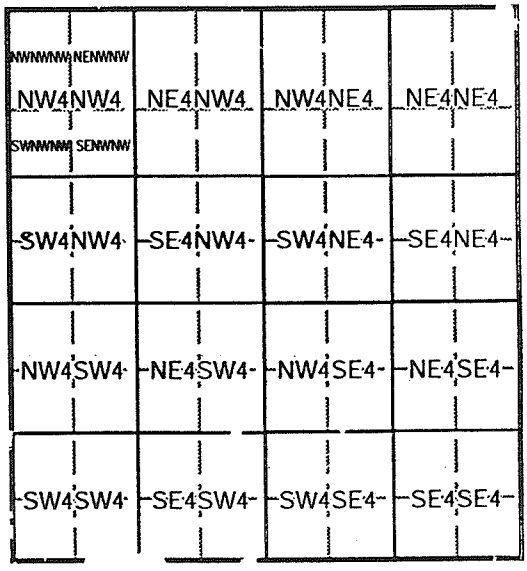
A Wide Section



A Tall and Wide Section



A Tall Section



NOTE: Align the southeast corner of the template with the southeast corner of the section on the topographic map.

Appendix B: Guide to Stream Order Classification

Guide to Stream Order Classification